



PATIENT

Jimmy Northstar
Rescue

SPECIES

Canine

BREED

Terrier x

SEX

Neutered Male

AGE

9

WEIGHT

77

INTERPRETED BY

Eric Lindquist, DMV,
DABVP (CFM), Cert.
IVUSS

IMAGING PERFORMED BY

Jenn

HOSPITAL NAME

Rockaway Animal
Hospital

REFERRING VET

Dr. Kahn

INVOICE

72813

DATE

2/9/26

PRESENTING CLINICAL SIGNS

Presented in DKA new diabetic unable to stand azotemic Hx of sinus tachycardia with no structural change to heart last echo 2 years ago elsewhere , Current meds Sorolol Diltiazem IVF Cerenia Pantrop Unasyn Humulin R and Novalin N

Abnormal PE/Chem/CBC/UA Results: Non regenerative anemia Increased Neuts Increased Mono Increased Na decreased K Increased ALT ALP BUN Creat

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	--	--	1.3	1.3	45	80	0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (lbs)	LAD LA MAX 4 Chamber	LVIDd Avg; 2D and m-mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	120	1.9	60	77	5.1	45	--

E-wave velocity =1.3

Cardiac Presentation

The **left atrial** size was slightly excessive in the LA Max position. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated moderate insufficiency. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum** and **pericardial** regions were free of masses in the visible window.



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Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal. The pelvic urethra was imaged 2.0 cm beyond the cystourethral junction.

The **kidneys** were normal in size and contour; however, a minor hyperechoic ring was noted at the corticomedullary junction. This is consistent with diabetic nephropathy. This is likely from glucosuria. However, assessment for proteinuria is also warranted. This is an idiopathic finding, but an expected finding in diabetic patients. Left kidney measured 8.68 cm. Right kidney measured 8.1 cm.

Adrenal Glands

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. Left measured 2.43 cm x 0.62 cm at the caudal pole and 0.66 cm at the cranial pole. Right measured 3.0 cm x 2.0 cm at the cranial pole and 0.80 cm at the caudal pole.

Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

Liver

The **liver** was diffusely hyperechoic to the falciform fat with occasional hypoechoic, non-disruptive nodular change. The liver revealed generalized enlargement. The gallbladder was unremarkable. There is no suspicion of neoplasia; however, diffuse disease is present. Bile acid profile would be ideal as well as FNA.

Gastrointestinal

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

ULTRASONOGRAPHIC FINDINGS

- Mitral insufficiency with mild left atrial enlargement.
- Diabetic nephropathy.
- Diabetic hepatopathy.



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

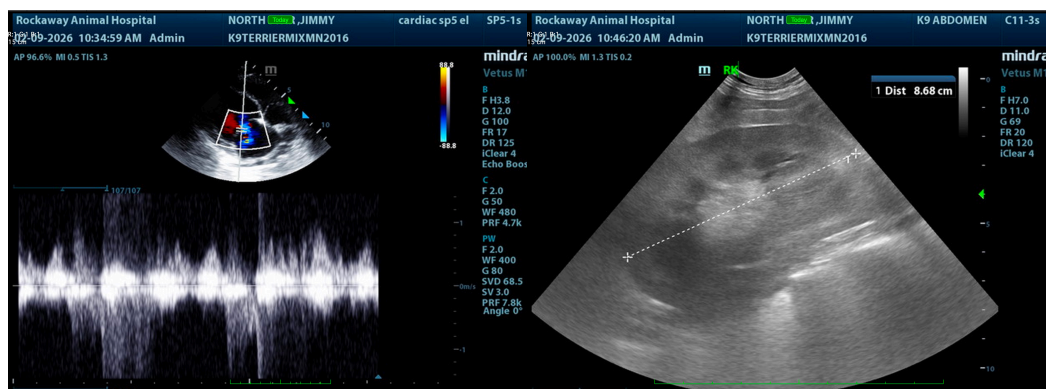
Pimobendan could be initiated. However, the heart is not likely a primary issue in this case. Management for DKA indicated. Bile acid profile indicated.

The heart has minor volume overload and is working to compensate for the valvular insufficiency. Target respiratory rate is < 20 resp/minute after therapy. After initiating or adjusting therapy, I recommend recheck on the clinical exam, BUN, Creatinine, USG, Chest radiographs & Blood pressure in 5-7 days. Recheck echo in 3-6 months, earlier if clinical decompensation is occurring. Minor anesthetic risk for a brief procedure at this time. Repeat preanesthetic echo is ideal if anesthesia is eventually necessary. A suggested anesthetic combination would involve torbutrol premed, propofol induction, isoflo maintenance or equivalent protocol.

Potential Causes of Diabetic Dysregulation

This is a suggestive checkoff list when faced with an unregulated diabetic patient:

- UTI
- Dietary indiscretion/intolerance
- Pancreatitis
- Hyperthyroidism/hypothyroidism
- Exogenous steroids (including topical eye meds)
- Cushing's
- Acromegaly
- Owner compliance
- Insulin quality issues
- Antibodies to insulin
- Underlying Neoplasia
- Diffuse liver disease





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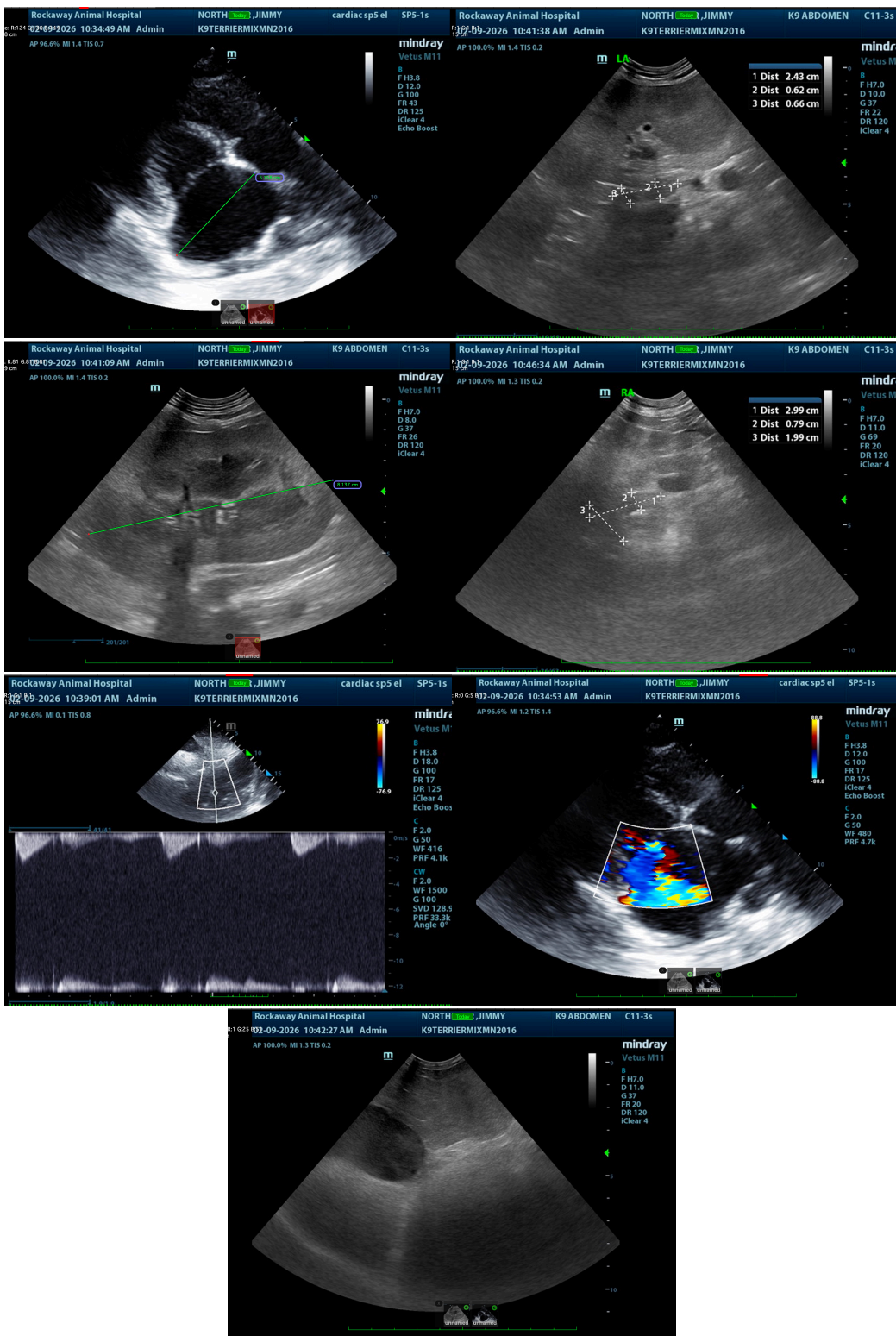
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Eric Lindquist, DMV, DABVP(CFM), Cert. IVUSS,
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